

not found to pay commercially, although peat charcoal is well adapted for working and tempering iron for the finer kinds of cutlery. The Irish Peat Company erected extensive plant for drying and distilling the peat and producing tar, illuminating oil and paraffin. At these works, one ton of peat yielded 10 gallons of tar, or 28 lbs. of illuminating oil and 1 lb. of paraffin.

One of the last volumes of the *Encyclopédie Scientifique*, published in Paris,¹ is devoted to a treatise on peat and peat bogs. It describes the conditions under which peat was originally formed, the plants of which it is composed, the chemical analysis of its constituents, the principal bogs in Europe, the age of peat as deduced from the remains of animals, flint implements and tools found buried in it, the methods of obtaining and preparing peat for commercial purposes, the uses to which it is applied and its calorific value and antiseptic qualities.

W. H. WHEELER.

THE BRITISH AND GERMAN ANTARCTIC SHIPS.

THE two great Antarctic expeditions have made a stride towards completeness by the launch at Dundee and Kiel of the exploring ships *Discovery* and *Gauss*, both vessels built, at great expense, specially for service in the Antarctic ice. No complete official announcement of the organisation and programme of either expedition has yet been made. However, the two ships are afloat, and appear to be the finest vessels for ice-navigation ever constructed, not even excepting the *Fram*, which of course was planned for drifting with the ice-floes, not for sailing through them.

The following table compares the chief dimensions of the two vessels, so far as we have been able to ascertain them:—

	<i>Discovery.</i>	<i>Gauss.</i>
Length over all ... (feet) ...	—	168
" at water line ...	172	—
" between perpendiculars ...	—	151
Extreme Breadth ...	34	35
Probable displacement fully loaded (tons)	1750	1450
Horse-power ...	450	300-500
Rig ...	Barque	Barquentine
Complement all told (souls) ...	46	28

It is stated the name of *Gauss* was given to the German vessel by the Emperor to emphasise the scientific character of her mission by associating it with the memory of the great authority on terrestrial magnetism.

The German vessel, although a little smaller than the *Discovery*, is intended to carry so much smaller a crew that she will probably prove to be no more crowded with her stores and equipment. Both vessels are strongly built of oak and sheathed in greenheart. The *Discovery*, like the *Fram*, has her frames in contact throughout her whole length, and the joints caulked so that even if all her triple skin of planking were stripped from her the vessel would still be watertight and seaworthy. She is of whaler pattern to the extent that her sides are not pierced by any openings, the only daylight for the cabins coming from deck-lights; but the cabins, though dark and uninviting at the launch, are exceptionally roomy and well-planned, and when lighted by the electric light will be extremely comfortable. The *Gauss* is also to be furnished with the vital necessity of electric light, a boon that none but polar voyagers can fully appreciate, and she is, in addition, to have the luxury of steam-pipes for heating purposes throughout the whole inhabited part of the ship; the *Discovery* will probably be heated by stoves.

Both vessels are provided with wells and gear for

hoisting out both rudder and propeller, and a spare rudder will be carried which can be shipped securely and speedily if the original steering gear should be seriously damaged. The bows of both ships are heavily plated with steel to enable them to cut through or break comparatively thin ice; but the form of the stem is different. Both have a great sheer, so that the vessel would tend to ride up on any floating ice she encountered and break it with her weight, but the stem of the British ship is a straight line forming an obtuse angle with the keel, while that of the German vessel is a convex curve. The sterns also differ, that of the British vessel having a much longer overhanging counter than the *Gauss*, so that her length over all is probably from 15 to 20 feet greater.

The details of laboratory accommodation can be more profitably described when the space is finally apportioned and the equipment in place; but the magnetic observatory on the *Discovery* has been very carefully planned so that it shall be more than 30 feet from any iron or steel—even the bolts and nails in its vicinity are all of brass.

The living rooms in both vessels are amidships, the stokehold and engine-room being placed right aft, while the whole lower hold is utilised as a great coal-bunker along the length of the ship. The *Discovery* is rigged as a barque; the rig of the *Gauss* is officially described as that of a "three masted schooner," but her published sail-plan shows the foremast completely square-rigged, the main and mizzen having only fore-and-aft sails, so that she is better called a barquentine. We believe that this rig, rendered necessary probably on account of the small crew carried, is not a usual one for polar ships. Machinery and masts are now being rapidly put in place, and the *Discovery* may be expected in the Thames to take her stores on board about the end of May or early in June.

MEETING OF THE INTERNATIONAL ASSOCIATION OF ACADEMIES.

THE business of the Paris meeting of the International Association of Academies was commenced on Tuesday morning, when the delegates assembled at the Institute. The delegates were received, on Saturday, by the president; and the French Government, as well as the Municipal Authorities, have combined with the Institute to make the meeting a success by facilitating all the arrangements and providing lavish entertainment. By this official action, the dignity and importance of the meeting are declared, and the delegates are made to feel that they are welcome visitors.

Tuesday's meeting was devoted to preparatory business, and M. Darboux gave an address on the objects and work of the Association. The financial position was considered, and suggested additions and alterations of the rules were discussed. A committee was appointed to consider a scheme for the mutual loan of manuscripts. In the evening, the president of the Institute, Count de Franqueville, gave a reception to the delegates and their families at his residence, the Château de la Muette. Yesterday the arrangements included a visit to the Château of Chantilly, bequeathed to the Institute by the Duc d'Aumale. This afternoon there will be a reception by M. Emile Faguet at the French Academy, and in the evening a dinner will be given by the Institute. On Saturday afternoon a visit will be made to the National Library, under the direction of M. Léopold Delisle, and on Saturday evening the Municipal Council will give a dinner to the delegates and members of the Institute. The dinner will be followed by a reception and concert, to which the families of the guests are invited. On Sunday a special piece will be represented at the Comédie-Française in honour of the delegates.

From this programme it will be seen that the serious

¹ "La Tourbe et Les Tourbières, par Alb. Larbalétrier. *Encyclopédie scientifique des Aide Memoire.*" (Paris: Masson et Cie.)

work of the meeting will be relieved by congenial entertainment. The way in which the various authorities, as well as private individuals, are contributing to make matters run smoothly, and to ensure that the delegates shall remember their visit with pleasure, is a noteworthy characteristic of the arrangements.

NOTES.

IT appears that the Bement collection of minerals, which became the property of the American Museum of Natural History at the end of last year, was presented to the museum by Mr. J. Pierpont Morgan. The collection is estimated to be worth about 40,000*l.*, and was commenced by Mr. C. S. Bement, of Philadelphia, who began it thirty-five years ago and kept adding to it until it passed from his possession. Neither time nor money was spared in gathering desirable specimens, and in 1884 the Bement collection was looked upon as so important as to be made the subject of a special report in the interest of the National Museum, Washington. Mr. Morgan's public spirit and generosity have prevented the collection from being distributed or from leaving the United States. In addition to this gift, he has presented to the museum the Tiffany collection of gems. Mr. Morgan's earlier contributions to the museum, of which he is a trustee, have been on a munificent scale, but the recent gifts surpass previous ones in value and scientific interest. Referring to the gifts at a recent meeting of the Board of Trustees, Mr. A. S. Hewitt remarked:—"The trustees rejoice that the museum begins the new century with the acquisition of two very remarkable, if not unique, collections of minerals, which, added to the treasures already in its possession, raise its position among the museums of the world to the level occupied by the British Museum, heretofore, by common consent, regarded as rich beyond comparison in rare specimens.

WITH reference to the recent proposal to stock the London parks with butterflies, Prof. Meldola writes to say that the experiment, although worth trying, is not, in his opinion, likely to prove successful. The species which have been observed in the Metropolis are, with the exception, perhaps, of *Pieris rapae*, only casual visitors, for the most part imported and only occasionally immigrating spontaneously. It is very doubtful whether the species which it is proposed to introduce, viz. the *Vanessas*, would survive more than the first season, and if any should escape the London sparrow and hibernate it is more than probable that they would voluntarily migrate the following spring to fresher surroundings than could be offered by a vegetation which had gone through the ordeal of a London winter. Prof. Meldola adds that in the year 1871 he perfectly well remembers the leopard-moth, *Zeuzera aesculi*, being quite common on the tree-trunks in the London parks and squares. It was observed during that season that the ground at the foot of the trees was often littered with wings of the moth, as though some bird—probably the sparrow—had been at work among the insects. If the suggestion to stock the parks necessitated an annual renewal of the butterflies, it would be better to leave them in their native country haunts.

It is stated that the Cunard Company contemplate utilising the Marconi wireless telegraph on their Atlantic steamers.

MR. C. E. BORCHGREVINK, the Antarctic explorer, has been created a Knight of the Order of St. Olaf by King Oscar.

MR. J. WILSON, U.S. Secretary of Agriculture, has arranged to carry into effect, on July 1, the reorganisation of certain of the divisions of the Department of Agriculture, as provided by the last Congress. It may be remembered that, in addition to the Weather Bureau and the Bureau of Animal Industry, four new bureaus were created, namely, those of Plant Industry, of Forestry, of Chemistry and of Soils.

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WE learn from *Science* that an influential committee has been formed in Italy to celebrate the fortieth anniversary of Prof. Paul Mantegazza's entrance on his career as a teacher. This event will be celebrated at Florence on April 30, and at the same time as the thirtieth anniversary of the Italian Society of Anthropology. It is proposed to collect a sum of money to be used for the endowment of the new laboratory of anthropometry which Prof. Mantegazza has established at Florence.

THE Rome correspondent of the *Times* records the opening, by Lord Currie, of the British Archaeological School in Rome. More than one hundred representatives of international archaeology gathered at the Palazzo Odescalchi, where the school is situated, the Italian Government being represented by Commendatore Fiorilli, Director-General of Antiquities and Fine Arts, the Academia dei Lincei by several members, the German Archaeological Institute by Profs. Petersen and Hülfsen, and the French École de Rome by Mgr. Duchesne.

SEVERAL papers on scientific aspects of alcoholism were read at the International Temperance Congress held at Vienna last week. Among the subjects described and discussed were the effect of small fixed quantities of alcohol on the speed and quality of certain simple and calculable mental operations, such as sums in addition, and committing figures to memory; the poisonous effects of alcohol in certain nervous affections; the effect upon the power of resistance to disease; remedial measures; and reforms recently introduced into the French Army for the repression of alcoholism.

It has been decided (says the *Victorian Naturalist*) that the National Fund raised in memory of the late Baron von Mueller, Government Botanist of Victoria, shall be devoted to the institution of a medal and prize to be awarded at intervals of not less than two years to the author of the most important contribution to natural knowledge which shall have been published in the British dominions not more than five years, or less than one year, prior to the date of the award, preference being given to work having special reference to Australasia. It is proposed that the Mueller Medal shall be awarded by a committee of the Australasian Association for the Advancement of Science appointed for the purpose every two years.

FROM the *Victorian Naturalist* we understand that Prof. Spencer, F.R.S., of the Melbourne University, and Mr. F. J. Gillen, of South Australia, will start from Oodnadatta, the present terminus of the transcontinental railway, nearly 700 miles north of Adelaide, on their expedition for the purpose of studying the habits and customs of the aboriginals of the northern portion of Central Australia, about the middle of the present month. The start has been somewhat delayed owing to the drought which has existed for some time in the portion of the continent to be visited. It is also proposed to cross into Queensland and continue Dr. Roth's ethnological work, and afterwards to traverse some of the larger rivers of the Northern Territory, and if time permit, to visit the Wyndham district on Cambridge Gulf in North-West Australia.

A COMMITTEE, to be known as the Lightning Research Committee, has been organised by the Royal Institute of British Architects and the Surveyors' Institution, with the object of collecting and tabulating information from all parts of the country as to damage resulting to buildings from lightning. The committee includes Mr. John Slater (chairman), Major-General E. R. Festing, C.B., F.R.S., Dr. Oliver Lodge, F.R.S., Messrs. J. Gavey, W. P. Goulding, W. N. Shaw, F.R.S., H. H. Statham, A. R. Stenning, Arthur Vernon, Killingworth Hedges, C.E. (hon. secretary). In pursuance of their inquiry the committee seek the co-operation of competent observers in all parts of the country, with a view to obtaining accurate